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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,893	12/16/2005	Luca Boiero	09952.0014	2361

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EXAMINER	
NGUYEN, NGA X	

ART UNIT	PAPER NUMBER
3662	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/560,893	BOIERO ET AL.	
	Examiner	Art Unit	
	NGA X. NGUYEN	3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 December 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *41,43-49,51,54-62,64,79,81 and 82* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *41,43-49,51,54-62,64,79,81 and 82* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12/03/2007 & 5/21/2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claim 41, 43-49, 51, 54-62, 64, 79 & 81-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nir (2003/0224802) in view of Zhao (20030085838).

With regard to claim 41, 55, 79 & 81, Nir discloses:

- The mobile terminal both in a satellite-based positioning system and in a cellular communication system, whereby the mobile terminal is adapted to receive satellite signals from the satellite based system and to be covered by at least one cell of the cellular communication system (see page 2, paragraph 16-20)
- Determining at least approximately the coordinates of the mobile terminal based on both satellite signals form the satellite based system and information related to the cellular communications system (see page 2-3, paragraph 21-25).

Nir does not teach the altitude coordinate which is related to the cellular communication (base station). Zhao discloses:

- Determining at least approximately the coordinates of the mobile terminal based on both satellite signals form the satellite based system and information related to the cellular communications system, wherein the coordinated include an altitude coordinate (see page 1-2, paragraph 17-20):

- Deriving an estimate of the altitude coordinate from information related to an altitude of one or more network elements in the cellular communications system (see page 2, paragraph 19-20).
- Determining at least one approximate search area using the estimate of the altitude coordinate and information provided by the satellite-based system (see page 2, paragraph 26)
- Identifying the coordinates of the mobile terminal in the at least one approximate search area (see page 2, paragraph 26).

It would have been obvious to modify Nir by incorporating the teaching of Zhao's system that the cellular communication system having altitude coordinate so as the mobile terminal is enable to perform position information with 3D that based on GPS (two dimension) and an altitude that related to cellular network.

With regard to claim 44 & 58, Zhao teaches

- Identifying, in the cellular communication system, a plurality of base station adjacent to the mobile terminal, each said adjacent base station having a respective altitude coordinate (see page 1, paragraph 15).
- Determining the minimum/average of the altitude coordinate for the adjacent base stations (see page 1-2, paragraph 1)
- Using the minimum/average value as the estimate of the altitude coordinate (see page 2, paragraph 18)

With regard to claim 46 & 59, Zhao teaches

- Performing power measurements providing, for each said adjacent base station a respective power value for said mobile terminal (see page 2, paragraph 18)
- Determining said average value as a weighted average of the respective altitude coordinates values, the weighting being a function of said power values determined for each said adjacent base station (see page 2, paragraph 19)

With regard to claim 47 & 60, teaches that the positioning coordinates are determined in an iterative manner by subsequent location steps, a new refined estimate of the altitude coordinate being used at each step in the iterative process (see page 2, paragraph 20)

With regard to claim 56 & 82, Nir teaches:

- Providing a geographical data base comprising data base items associated with a given set of bi-dimensional positioning coordinates of the mobile terminal in the area corresponding to values for the altitude coordinate (see page 2, paragraph 21-25).
- Accessing the geographical data base via the mobile terminal whereby the positioning coordinates, as at least approximately determined by the mobile terminal based on the satellite signals (see page 2, paragraph 23).

With regard to claim 43 & 57, Zhao teaches:

- Identifying, in the cellular communications system, at least one base station proximate to the mobile terminal, the proximate base station having an associated altitude coordinate and using the altitude coordinate of the proximate base station as the estimate of the altitude coordinate (see page 1-2, paragraph 17).

With regard to claim 48 & 61, Zhao teaches:

- Providing an approximate bi-dimensional positioning of the terminal on the basis of the information related to the cellular communications system (see page 2, paragraph 18).

Nir teaches:

- Determining the positioning coordinates of the mobile terminal on the basis of the satellite signals by exploiting the two-dimensional positioning and the estimate of the altitude coordinate (see page 2, paragraph 20).

With regard to claim 49 & 62, Zhao teaches

- Initially determining a search area for positioning coordinates of said mobile terminal based on said satellite signals and the estimate of the altitude coordinate (see page 1, paragraph 14)
- Subsequently identifying the positioning coordinates within the search area based on information related to the cellular communications system (see page 1, paragraph 15-1)

With regard to claim 51 & 64, Zhao teaches

- Determining a 1st set of values for the location coordinate on the basis of the information related to the cellular communication system (see page 1, paragraph 14-15)
- Acquiring the satellite signals from the satellite based system and deriving therefrom an area likely to include the mobile terminal (see page 1, paragraph 14)

- Providing a new set of values of the location coordinates (see page 2, paragraph 20)
    - Effecting based on the information related to the cellular communication system, a bi-dimensional positioning of the mobile terminal within said area likely to include the mobile terminal (see page 2, paragraph 18)
    - Accessing a geographical data base and associating to the bi-dimensional positioning coordinates of the mobile terminal within said area a corresponding value for said altitude coordinate (see page 2, paragraph 20)

With regard to claim 54, Nir teaches determining at least approximately the coordimates based on satellite signals received from less than three satellites of the satellite based system (see page 2, paragraph 21).

2. Claim 50, 52-53, 63, 65-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nir and Zhao as applied to claims 49, 51 above, and further in view of Riley (2003/0125046).

With regard to claim 50 & 63, Riley teaches

- Determining the search area for positioning coordinate in the form of a hyperbolic set of points (see page 3, paragraph 36)
- Determining the positioning coordinates within the hyperbolic set of points by using the information related to the cellular communications system (see page 5, paragraph 54).

It would have been obvious to modify Nir and Zhao by incorporating the teaching of Riley's system to determining the positioning coordinate within the hyperbolic set of points so as the mobile terminal's location information is reported accuracy and quickly.

With regard to claim 52-53 & 65-66, Riley teaches

- Determining the distance between the new set of values and the first set values (see page 7 , paragraph 83)
- Comparing the distance with a threshold (see page 7, paragraph 83)
- If the distance is higher than the threshold, starting an iterative process (see page 7-8, paragraph 83-84).

Response to Amendment

3. Applicant's reply to the Office Action on 12/02/2008 has been fully considered but they are not persuasive.

Applicant argues that the prior arts (especially Zhao, et al.) do not teach the claims limitations with examiner's responses following below.

With respect to claim 41, 55 & 79, Zhao teaches:

- Deriving an estimate of the altitude coordinate from information related to an altitude of one or more network elements in the cellular communications system (see page 2, paragraph 19-20).
- Determining at least one approximate search area using the estimate of the altitude coordinate and information provided by the satellite-based system (see page 2, paragraph 26)

- Identifying the coordinates of the mobile terminal in the at least one approximate search area (see page 2, paragraph 26).

With respect to claim 81, Zhao teaches:

- Determining whether a geographical data base (terrain map or database) associating bi-dimensional positioning coordinates with corresponding altitude coordinate is available (see page 1, paragraph 15)
- Deriving in response to determining that the geographical data base is not available, and estimate of the altitude coordinate from information related to an altitude of one or more network elements in the cellular communications system (see page 2, paragraph 19-26).

Claims 43-49, 51, 54, 56-64 & 82 are depended on claims 41, 55, 79 & 81 which prior arts disclosed all the limitations of claim 41, 43-49, 51, 54-62, 64, 79 & 81-82.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NGA X. NGUYEN whose telephone number is (571)272-5217. The examiner can normally be reached on 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TARCZA H. THOMAS can be reached on (571) 272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NGA X NGUYEN
Examiner
Art Unit 3662

NXN

/Thomas H. Tarcza/

Supervisory Patent Examiner, Art Unit 3662